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how largely due to other causes. White women in Hawaii represent a highly selected class—the wives and families of capitalistic and professional classes. Many white women in Hawaii have enjoyed excellent health, have raised large families of stalwart children, and have lived to ripe old age.

On the whole, there is little evidence of tropical “ennervation” or lassitude among the white population of the Hawaiian Islands. In high moral, intellectual and physical life, tone and labors, this population compares most favorably with similar groups in any northern climate. In spiritual leadership, in literary and artistic productivity, in scientific and technical research, in financial and business organization and development, in agricultural exploitation, in sport and athletics—in fact, in every notable manifestation of the human mind and body, the white man in Hawaii has achieved remarkable success. He shows no signs of deterioration; on the contrary, in his efforts toward higher civic life, and toward the establishment of a permanent white middle class on the land, he shows that he is ever progressing to higher and higher levels.

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SCIENTIFIC BOOKS

Stoichiometry. By SYDNEY YOUNG, D.Sc., F.R.S. New York, Longmans, Green & Co. 1918. Pp. xii + 363. With 93 figures in the text. Second Edition. Price \$3.75 net.

It is unfortunate, indeed, that general texts are not more often written by those who have done much research in the particular lines covered by the book—for the advantages of such authorship are plainly apparent in “Stoichiometry.” Certainly no name of recent time has become more intimately associated with the *precise* determination of the physical constants of the gaseous and liquid states of aggregation than that of Young; and assuredly no one can speak with more authority than he of a subject which includes them; or treat with a clearer vision the things dependent upon them.

In this edition, the new experimental work, done since the original appearance of the book, has been ably summarized and included. In other respects, all that was said in praise of the first edition may be repeated even more emphatically in the case of the second. The inclusion of complete lists or references is one thing which renders the work especially valuable to the reader, for it thus serves as a point of departure for one wishing to make a more exhaustive study of any one of its component portions.

Like the same author’s “Fractional Distillation,” this is distinctly one of those books which should have a prominent place in every chemist’s *working* library.

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THE PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES

THE eighth number of Volume 4 of the *Proceedings of the National Academy of Sciences* contains the following articles:

Hereditary Tendency to Form Nerve Tumors: C. B. Davenport, Station for Experimental Evolution, Carnegie Institution of Washington. The disease is not communicable. It affects blood relatives, both sexes nearly equally, and occurs without a break in the generations, about 50 per cent. of the individuals being affected. Apparently, therefore, the heredity factor in neurofibromatosis is dominant.

Arithmetical Theory of Certain Hurwitzian Continued Fractions: D. N. Lehmer, Department of Mathematics, University of California. Investigations on the successive values of the numerators and denominators of convergents.

On Closed Curves Described by a Spherical Pendulum: Arnold Emch, Department of Mathematics, University of Illinois. Some geometric properties of these curves are developed.

The Taxonomic Position of the Genus Actinomyces: Charles Drechsler, Cryptogamic

Laboratories, Harvard University. A morphological study for the purpose of determining the merits of various contending views.

Studies of Magnitudes in Star Clusters, VIII. A Summary of Results Bearing on the Structure of the Sidereal Universe: Harlow Shapley, Mount Wilson Solar Observatory, Carnegie Institution of Washington. A summary of results leads to a simple interpretation of star-streaming. The stars of Stream I. belong to the large moving cluster surrounding the sun, those of Stream II. belong to the galactic field.

Glacial Depression and Post-Glacial Uplift of Northeastern America: H. L. Fairchild, Department of Geology, University of Rochester. An illustration of the geophysical theory of isostasy.

A Bacteriological Study of the Soil of Loggerhead Key, Tortugas, Florida: C. B. Lipman and D. D. Waynick, College of Agriculture, University of California. A discussion of bacterial counts, nitrogen transforming powers of the soils, and nitrogen fixing powers and organisms.

Autonomous Responses of the Labial Palps of Anodonta: P. H. Cobb, Zoological Laboratory, Harvard University. The palp contains within itself the neuro-muscular organism necessary for the responses described, and therefore possesses an autonomy more complete than that of the vertebrate heart.

The Depth of the Effective Plane in X-Ray Crystal Penetration: F. C. Blake, Department of Physics, Ohio State University. In determining the value of h by means of X-rays, the "depth of the effective plane" was 0.203 mm. for calcite with a certain X-ray wave length. An attempt is here made to explain this theoretically.

The Myodome and Trigemino-Facialis Chamber of Fishes and the Corresponding Cavities in Higher Vertebrates: Edward Phelps Allis, Jr., Palais Carnolés, Menton, France.

The Effect of Inbreeding and Crossbreeding upon Development: D. F. Jones, Connecticut Agricultural Experiment station, New Haven. A continuation of work by East and Hayes on

the naturally cross-pollinated corn plant, *Zea mays* L.

National Research Council: Executive Order Issued by the President of the United States May 11, 1918; Minutes of the Second Meeting of the Executive Board of the War Organization in Joint Session with the Council of the National Academy of Sciences; Minutes of Third Meeting of Executive Board of War Organization.

Report of the Annual Meeting of the Academy: Award of Medals; Research Grants from Trust Funds of the Academy.

THE ninth number of Volume 4 contains the following articles: *Metalliferous Laterite in New Caledonia:* W. M. Davis, Department of Geology and Geography, Harvard University. Laterite ores of the serpentine highlands seem to be local as to area of development and intermittent as to time or origin and duration of occurrence.

A Comparison of Growth Changes in the Nervous System of the Rat with Corresponding Changes in the Nervous System of Man: Henry H. Donaldson, Wistar Institute of Anatomy and Biology, Philadelphia. The five events in the growth of the nervous system of the rat, namely, (1) increase in total weight, (2) decrease in percentage of water, (3) accumulation of myelin, (4) maturing of the cerebellum, (5) attainment of mature thickness of the cerebral cortex, all take place at ages equivalent, or nearly equivalent to those at which they occur in man; and hence, by the use of equivalent ages there is a satisfactory method for making a cross reference between the rat and man.

Variation and Heredity During the Vegetative Reproduction of Arcella Dentata: R. W. Hegner, Zoological Laboratory, Johns Hopkins University. Within a large family of *Arcella dentata* produced by vegetative reproduction from a single specimen, there are many heritably diverse branches. These diversities are due both to very slight variations and to sudden large variations or mutations. The formation of such hereditarily diverse branches seems to be a true case of evolution

observed in the laboratory, and occurring in a similar way in nature.

The Importance of Nivation as an Erosive Factor, and of Soil Flow as a Transporting Agency, in Northern Greenland: W. Elmer Ekblaw, Crocker Land Expedition, American Museum of Natural History, and University of Illinois. Nivation and solifluction, characteristic processes of disintegration and denudation under subarctic or arctic conditions, appear to be of prime importance in the reduction of high relief of northern Greenland.

On the α -Holomorphisms of a Group: G. A. Miller, Department of Mathematics, University of Illinois. A solution of the problem: For what values of α is it possible to construct non-abelian groups which admit separately an α -holomorphism?

THE tenth number of Volume 4 contains the following articles:

Measuring the Mental Strength of an Army: Major Robert M. Yerkes, Sanitary Corps, N. A. A review of the psychological undertakings in connection with the examination of the recruits for the U. S. Army.

Thermo-Electric Action with Thermal Effusion in Metals: A Correction: Edwin H. Hall, Jefferson Physical Laboratory, Harvard University. Supplementary to an earlier paper.

Invariants and Canonical Forms: E. J. Wilczynski, Department of Mathematics, University of Chicago. A general proof in the sense of Moore's general analysis of the fact that the coefficients of a unique canonical form are invariants.

Types of Phosphorescence: Edward L. Nichols and H. L. Howes, Department of Physics, Cornell University. Two types of phosphorescence known as *persistent*, and as *vanishing*, are distinguished and discussed. The types are apparently independent, and both may occur with a single source of excitation, and in a single substance.

The Smithsonian "Solar Constant" Expedition to Calama, Chile: C. G. Abbot, Smithsonian Astrophysical Observatory. A preliminary report on the aim and equipment of the Calama Expedition.

*Maroon—A Recurrent Mutation in *Drosophila*:* Calvin B. Bridges, Marine Biological Laboratory, Woods Hole.

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SPECIAL ARTICLES

ON THE NATURE OF THE PIGMENTATION CHANGES FOLLOWING HYPOPHYSECTOMY IN THE FROG LARVA

It has been shown by Smith¹ and by Allen² that the removal of the hypophysis fundament from the young larval frog is followed by a marked change in pigmentation. Within seven to ten days after the operation—which is most successfully performed when the larva is 3.5–4.0 mm. in length—the color of the tadpole changes from black to "silvery," or as Smith describes it, the larva becomes an albino.

Smith and Allen hold quite different views as to the nature of this pigmentation change. Smith thinks that the silvery appearance of the operated tadpoles is due to a reduction in the number of melanophores in the epidermis and to a loss of the individual pigment granules contained in these melanophores. He states that the melanophores are equally expanded in the albinos and in the controls, "consequently the lighter color of the albinos can not be due to the contracted condition of the chromatophores but must be referred, in part, to the reduced number of melanin granules in the pigment cells of the epidermis."

Allen, on the other hand, believes that the lighter color of the operated larvæ is due to the fact that the epidermal pigment cells have migrated to deeper positions and that the pigment cells are contracted throughout all parts of the body. He is convinced that "there is no disappearance and bleaching of pigment granules as asserted by Smith." Each of these observers, apparently, has based his conclusions upon the study of sections entirely. It will be recognized readily that in

¹ Smith, P. E., *Anatomical Record*, Vol. 11, p. 57, 1916.

² Allen, B. M., *Biological Bulletin*, Vol. 32, p. 117, 1917.